TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Conceptual Understanding

16. ANS: B   PTS: 1   DIF: Moderate   REF: 1.6 Graphing Relations
    LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Problem-solving Skills

17. ANS: C   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
    LOC: 7.PR3|7.PR6|7.PR7   TOP: Patterns and Relations (Variables and Equations)
    KEY: Conceptual Understanding

18. ANS: B   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
    LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
    KEY: Conceptual Understanding

19. ANS: D   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
    LOC: 7.PR3|7.PR6|7.PR7   TOP: Patterns and Relations (Variables and Equations)
    KEY: Conceptual Understanding

20. ANS: C   PTS: 1   DIF: Moderate   REF: 1.7 Reading and Writing Equations
    LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
    KEY: Conceptual Understanding

21. ANS: C   PTS: 1   DIF: Moderate   REF: 1.7 Reading and Writing Equations
    LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
    KEY: Problem-solving Skills

22. ANS: D   PTS: 1   DIF: Easy
    REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
    TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

23. ANS: B   PTS: 1   DIF: Easy
    REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
    TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

24. ANS: C   PTS: 1   DIF: Easy
    REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
    TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

25. ANS: A   PTS: 1   DIF: Easy
    REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
   TOP: Patterns and Relations (Variables and Equations)   KEY: Procedural Knowledge

Unit 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. Let one white tile represent +1 and one black tile represent −1.
You have 12 black tiles. What tiles do you need to model 0?
a. 11 black   b. 12 white   c. 12 black   d. 11 white

_____ 2. Let one white tile represent +1 and one black tile represent −1.
You have 8 white tiles and 6 black tiles. What additional tiles do you need to model −2?
a. 4 white   b. 2 black   c. 4 black   d. 2 white

_____ 3. Let one white tile represent +1 and one black tile represent −1.

What is the least number of tiles that you can remove to model –6?

◻◻◻◻◻◻
■■■■■■
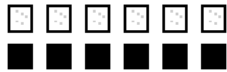
a.   0 black   b.   6 black   c.   6 white   d.   0 white

_____   4.   Let one white tile represent +1 and one black tile represent –1.
You have 17 white tiles and 17 black tiles.
What is the least number of tiles you can remove to model –10?
a.   10 white tiles   b.   7 white tiles   c.   10 black tiles   d.   7 black tiles

_____   5.   Let one white tile represent +1 and one black tile represent –1.
What sum does this set of tiles model? Write the addition equation.

◻◻◻◻◻◻
■■

a. $(-6) + (+2) = -4$ c. $(+6) + (-2) = +4$
b. $(+6) + (+2) = +6$ d. $(+6) + (+2) = +8$

_____   6.   Let one white tile represent +1 and one black tile represent –1.
What sum is modelled by 8 white tiles and 6 black tiles?
a.   +7   b.   +14   c.   –2   d.   +2

_____   7.   Add.
$(+8) + (-4)$
a.   +12   b.   –4   c.   +4   d.   –12

_____   8.   Use coloured tiles to find the sum.
$(-8) + (+5)$
a.   –13   b.   +3   c.   +13   d.   –3

_____   9.   Use coloured tiles to find the sum.
$(+8) + (-4)$
a.   –4   b.   –12   c.   +4   d.   +12

_____   10.   Use coloured tiles to find the sum.
$(+3) + (+6) + (-4)$
a.   –9   b.   +1   c.   +13   d.   +5

_____   11.   Write an addition equation modelled by the number line.

a. $(+2) + (+3) = +5$ c. $(-3) + (+2) = +5$
b. $(+2) + (-3) = -1$ d. $(+2) + (-3) = +1$

_____   12.   Use a number line to add.

$(+4) + (+15)$
a. $+11$ b. -19 c. -11 d. $+19$

____ 13. Use a number line to add.
$(+19) + (+11)$
a. $+30$ b. $+8$ c. $+23$ d. $+34$

____ 14. Use a number line to add.
$(+4) + (-10)$
a. $+6$ b. -14 c. $+14$ d. -6

____ 15. Use a number line to add.
$(-10) + (+1)$
a. $+11$ b. -11 c. -9 d. $+9$

____ 16. The temperature is 14°C and drops 7°C.
Write an addition equation to calculate the final temperature. What is the final temperature?
a. $(+14) + (-7) = +7$; 7°C c. $(+14) + (+7) = +10$; 10°C
b. $(+7) + (-14) = -7$; -7°C d. $(+7) + (+14) = +21$; 21°C

____ 17. During the day the temperature was -2°C. At night, the temperature dropped 8°C.
What was the temperature at night?
a. -10°C b. 6°C c. -6°C d. 10°C

____ 18. Let one white tile represent $+1$ and one black tile represent -1.
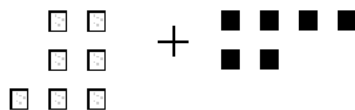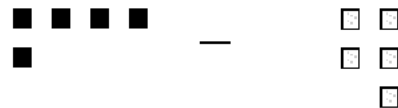Use tiles to subtract.
$(+7) - (-5)$
a.
+12
b.
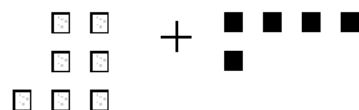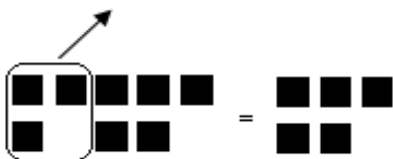+13
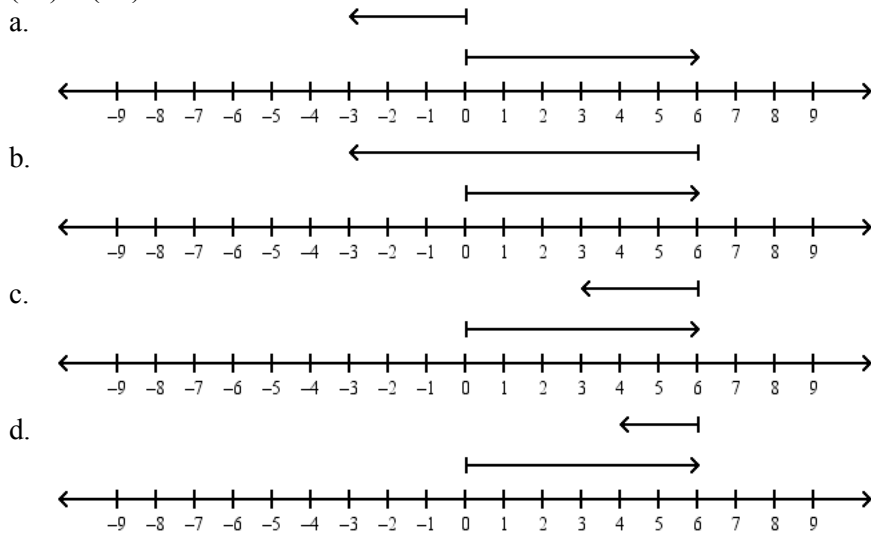c.
+12
d.
+2
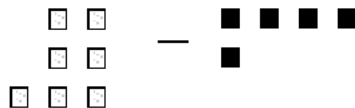
____ 19. Let one black tile represent -1.
Write the subtraction equation modelled by this diagram.

a. $(+8) - (+3) = +5$ c. $(+8) - (+3) = -5$
b. $(-8) - (-3) = -5$ d. $(-8) - (-3) = +5$

____ 20. Use tiles to subtract.
(+1) − (+13)
a. −14 b. +12 c. −12 d. +14

____ 21. Use tiles to subtract.
(+7) − (−2)
a. +5 b. −9 c. +9 d. −5

____ 22. Rewrite using addition.
(+5) − (−3)
a. (+5) + (−3) b. (+3) + (−2) c. (+5) + (+3) d. (+3) + (−5)

____ 23. Use a number line to subtract.
(+6) − (+3)
a.

b.

c.

d.

____ 24. Subtract.
(−22) − (+1)
a. −23 b. +23 c. −21 d. +21

____ 25. Use a number line to evaluate.
(+12) + (−3) − (+11)
a. −2 b. +4 c. +20 d. +2

Unit 2
Answer Section

MULTIPLE CHOICE

1. ANS: B   PTS: 1   DIF: Easy   REF: 2.1 Representing Integers
   LOC: 7.N6   TOP: Number   KEY: Conceptual Understanding
2. ANS: C   PTS: 1   DIF: Moderate   REF: 2.1 Representing Integers
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
3. ANS: C   PTS: 1   DIF: Moderate   REF: 2.1 Representing Integers
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
4. ANS: A   PTS: 1   DIF: Moderate   REF: 2.1 Representing Integers
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
5. ANS: C   PTS: 1   DIF: Easy   REF: 2.2 Adding Integers with Tiles
   LOC: 7.N6   TOP: Number   KEY: Conceptual Understanding
6. ANS: D   PTS: 1   DIF: Easy   REF: 2.2 Adding Integers with Tiles
   LOC: 7.N6   TOP: Number   KEY: Conceptual Understanding
7. ANS: C   PTS: 1   DIF: Moderate   REF: 2.2 Adding Integers with Tiles
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
8. ANS: D   PTS: 1   DIF: Moderate   REF: 2.2 Adding Integers with Tiles
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
9. ANS: C   PTS: 1   DIF: Moderate   REF: 2.2 Adding Integers with Tiles
   LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
10. ANS: D   PTS: 1   DIF: Difficult   REF: 2.2 Adding Integers with Tiles
    LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
11. ANS: B   PTS: 1   DIF: Easy
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Conceptual Understanding
12. ANS: D   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge
13. ANS: A   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge
14. ANS: D   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge
15. ANS: C   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge
16. ANS: A   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Problem-solving Skills
17. ANS: A   PTS: 1   DIF: Moderate
    REF: 2.3 Adding Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Problem-solving Skills
18. ANS: A   PTS: 1   DIF: Moderate   REF: 2.4 Subtracting Integers with Tiles
    LOC: 7.N6   TOP: Number   KEY: Conceptual Understanding

19. ANS: B   PTS: 1   DIF: Moderate   REF: 2.4 Subtracting Integers with Tiles
    LOC: 7.N6   TOP: Number   KEY: Conceptual Understanding
20. ANS: C   PTS: 1   DIF: Moderate   REF: 2.4 Subtracting Integers with Tiles
    LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
21. ANS: C   PTS: 1   DIF: Moderate   REF: 2.4 Subtracting Integers with Tiles
    LOC: 7.N6   TOP: Number   KEY: Procedural Knowledge
22. ANS: C   PTS: 1   DIF: Easy
    REF: 2.5 Subtracting Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Conceptual Understanding
23. ANS: C   PTS: 1   DIF: Moderate
    REF: 2.5 Subtracting Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Conceptual Understanding
24. ANS: A   PTS: 1   DIF: Moderate
    REF: 2.5 Subtracting Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge
25. ANS: A   PTS: 1   DIF: Difficult
    REF: 2.5 Subtracting Integers on a Number Line   LOC: 7.N6
    TOP: Number   KEY: Procedural Knowledge

Unit 3

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Write $\frac{6}{25}$ as a decimal.

    a. 1.2   b. 0.24   c. 1.8   d. 0.64

____ 2. Write $\frac{1}{4}$ as a decimal.

    a. 0.1   b. 0.25   c. $0.\overline{1}$ d. $0.2\overline{7}$

____ 3. Write $\frac{28}{15}$ as a decimal.

    a. $3.4\overline{6}$ b. $1.8\overline{6}$ c. $28.1\overline{3}$ d. $3.5\overline{3}$

____ 4. What is the least number in the set?
$\frac{7}{8}, \frac{3}{4}, \frac{2}{3}, \frac{3}{5}$

    a. $\frac{7}{8}$ b. $\frac{3}{4}$ c. $\frac{2}{3}$ d. $\frac{3}{5}$

____ 5. What is the greatest number in the set?
$\frac{3}{4}, \frac{4}{5}, \frac{9}{10}, \frac{7}{10}$

    a. $\frac{3}{4}$ b. $\frac{7}{10}$ c. $\frac{4}{5}$ d. $\frac{9}{10}$